



RESIDENTIAL WATER HEATER INSTALLATION AND REPLACEMENT

A plumbing permit is required to install a new water heater unit and for the replacement of an existing water heater. Permits are required prior to installation or replacement of water heaters.

Permit Issuance

Most residential water heater permits can be obtained on-line at www.e-OneStop.net. Permits can also be obtained at the One-Stop Permit Center. Following are water heater installation requirements from the 2001 California Plumbing Code:

- **Seismic Straps** - Water heaters require two seismic straps; one located within the top 1/3 of the water heater unit and one at the bottom 1/3. The bottom strap must be located at least 4" away from the water heater controls. (Section 510.5)

There are a number of seismic strap kits that are available commercially, however, metal plumbers tape can be used if it completely encircles the water heater and is then attached to a structural framing member at each end. Any platform supporting the water heater must be secured to the structure or the slab.

- **Venting** - The vent and the water heater must maintain clearance from combustible materials such as wall framing or roofing. Generally the minimum distance is 6" for single wall and 1" for double wall and the water heater, but check the manufacturers listing on the materials. The vent shall terminate a minimum 6" above the roof through flashing at the roof and terminate in a listed and approved vent cap. Vents may require additional supports depending on the material and design.

All single wall and single wall to double wall joints shall be secured with a minimum of three sheet metal screws, rivets or similar positive connection. (Section 512, 514.2, 515)

- **Pressure-Temperature Relief Valve** - All water heaters have a pressure/temperature (P/T) relief valve. The valve shall be drained to the exterior and terminate toward the ground maintaining between 6" and 24" of clearance from the ground and pointing downward. The diameter of the valve opening (generally 3/4") must be maintained to the termination of the drain. Check the manufacturer's requirements. When approved by the Chief Building Official, such drain may terminate at other locations (i.e. laundry tub, floor sink, or floor drain). No part of such drain shall be trapped and the terminal end of the drain shall not be threaded. (Section 608.5)
- **Located in a Garage** - Water heaters located in a garage must be elevated so the pilot light and controls are at least 18" above the garage floor surface. If subject to damage, adequate barriers must be installed. (Section 510.1, 510.3)

- **Located in an Attic for Furred Space** - If located in an attic or furred space (i.e. closet) where leaking could cause damage to underlying wood framing, the water heater must be set in a pan constructed of water tight corrosion resistant material. The pan must be fitted with a minimum 3/4" drain that drains to an approved location. The P/T line is not allowed to terminate at this pan or be connected to it. (Section 510.7)
- **Combustion Air** - Combustion air must be maintained per Uniform Plumbing Code. When the appliance is located in an unconfined space (e.g. garage) the combustion air can be used from that area. When located in a closet, combustion air must be provided at a minimum of two openings (one at the top and one at the bottom) sized at 100 square inches each. (Section 507)
- **Tankless Water Heaters** – Tankless water heaters shall be listed by an approved testing agency (UL, UPC, etc.) and be installed in accordance with the manufacturer's requirements.

Inspections Required

One final inspection is required after all the work has been completed.

If you have any questions, please call the City of Sunnyvale Building Division at (408) 730-7444. Information is also available on the Building Division web site at: www.sunnyvalebuilding.com.